

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An X-ray diagnosis apparatus for obtaining an X-ray image, comprising:

an X-ray radiator configured to radiate an X-ray to a specimen;

a detector configured to detect an X-ray data resulting from the X-ray;

a first shifter mechanism coupled to the detector and configured to shift the detector along a detecting plane of the detector;

a ~~second~~ changer mechanism coupled to the X-ray radiator and configured to change a radiation direction of the X-ray against the detector;

a controller configured to control the ~~second~~ changer mechanism in accordance with the shift of the detector; and

an image processor coupled to the detector and ~~configured to prepare~~ comprising a first fluoroscopic image data processing portion that prepares as the X-ray image based on the detected X-ray data and a second fluoroscopic image data processing portion that corrects ~~correct~~ a deformation of the fluoroscopic image data.

Claim 2 (Currently Amended): The apparatus according to claim 1, wherein the ~~second~~ changer mechanism rotates the X-ray radiator so as to change the radiation direction.

Claim 3 (Currently Amended): The apparatus according to claim 1, wherein the ~~second~~ changer mechanism includes a collimator locatable relative to the X-ray radiator and configured to collimate the X-ray; and wherein the controller controls a position of the collimator.

Claim 4 (Original): The apparatus according to claim 3, wherein the controller further controls an aperture of the collimator.

Claim 5 (Currently Amended): The apparatus according to claim 1, further comprising a ~~third~~ second shifter mechanism coupled to the X-ray radiator and configured to shift the X-ray radiator to a predetermined position.

Claim 6 (Currently Amended): The apparatus according to claim 1, further comprising an arm configured to support the detector through a detector supporter and to support the X-ray radiator; and wherein the first shifter mechanism shifts the detector relative to the detector supporter.

Claim 7 (Currently Amended): The apparatus according to claim 1, further comprising an arm configured to support the detector through a detector supporter and to support the X-ray radiator; and wherein the first shifter mechanism shifts the detector supporter coupled to the detector relative to the arm.

Claim 8 (Currently Amended): The apparatus according to claim 1, further comprising a designation device configured to designate the shift of the detector; an arm configured to support the detector through a detector supporter and to support the X-ray radiator; and wherein, when the designation device is operated to designate the detector to shift in a predetermined direction, the first shifter mechanism shifts the detector relative to the detector supporter in the predetermined direction and further shifts the detector supporter relative to the arm to help shift the detector in the predetermined direction.

Claim 9 (Original): The apparatus according to claim 1, further comprising a memory coupled to the image processor and configured to store a past image data; wherein the image processor is further configured to prepare, based on the past image data, a reference image data of a part of the specimen similar to what is viewed in the fluoroscopic image data in accordance with the shift of the detector.

Claim 10 (Original): The apparatus according to claim 9, wherein the reference image data is centered about a position corresponding to a center of the fluoroscopic image data in accordance with the shift of the detector.

Claim 11 (Original): The apparatus according to claim 9, further comprising a display configured to display the fluoroscopic image data and the reference image data.

Claim 12 (Original): The apparatus according to claim 1, further comprising a designation device configured to designate that the detector returns to an initial position.

Claim 13 (Currently Amended): The apparatus according to claim 1, wherein the first shifter mechanism shifts the detector in at least one of a first direction and a second direction perpendicular to the first direction.

Claim 14 (Original): The apparatus according to claim 1, further comprising a display coupled to the image processor and configured to display a processed image; wherein the image processor is further configured to prepare a contrast-enhanced reference image data prior to preparing the fluoroscopic image data; wherein the image processor is still further configured to perform a subtraction processing between the fluoroscopic image data and at

least a part of the contrast-enhanced reference image data, the part being determined in accordance with the shift of the detector; and wherein the display provides a subtraction processed image as the processed image.

Claim 15 (Currently Amended): An X-ray diagnosis apparatus for obtaining an X-ray image, comprising:

an X-ray radiator configured to radiate an X-ray to a specimen;

a detector configured to detect an X-ray data resulting from the X-ray;

a ~~first~~ shifter mechanism coupled to the detector and configured to shift the detector along a detecting plane of the detector;

~~a second~~ an exposur mechanism coupled to the X-ray radiator and configured to cause the X-ray to be exposed throughout an effective detecting area of the detector;

a controller configured to control the second mechanism in accordance with the shift of the detector; and

an image processor coupled to the detector, the image processor having a memory configured to store a past image data and being configured to prepare a fluoroscopic image data based on the detected X-ray data and a reference image data, based on the past image data, of a part of the specimen similar to what is viewed in the fluoroscopic image data in accordance with the shift of the detector.

Claim 16 (Original): The apparatus according to claim 15, wherein the reference image data is centered about a position corresponding to a center of the fluoroscopic image data in accordance with the shift of the detector.

Claim 17 (Currently Amended): The apparatus according to claim 15, wherein the ~~second~~ exposer mechanism rotates the X-ray radiator so as to cause the X-ray to be exposed throughout the effective detecting area.

Claim 18 (Currently Amended): The apparatus according to claim 15, wherein the ~~second~~ exposer mechanism includes a collimator locatable relative to the X-ray radiator and configured to collimate the X-ray; and wherein the controller controls a position of the collimator.

Claim 19 (Original): The apparatus according to claim 18, wherein the controller further controls an aperture of the collimator.

Claim 20 (Currently Amended): The apparatus according to claim 15, wherein the ~~second~~ exposer mechanism shifts the X-ray radiator to a predetermined position.

Claim 21 (Currently Amended): The apparatus according to claim 15, further comprising an arm configured to support the detector through a detector supporter and to support the X-ray radiator; and wherein the ~~first~~ shifter mechanism shifts the detector relative to the detector supporter.

Claim 22 (Currently Amended): The apparatus according to claim 15, further comprising an arm configured to support the detector through a detector supporter and to support the X-ray radiator; and wherein the ~~first~~ shifter mechanism shifts the detector supporter coupled to the detector relative to the primary supporter.

Claim 23 (Currently Amended): The apparatus according to claim 15, further comprising a designation device configured to designate the shift of the detector; an arm configured to support the detector through a detector supporter and to support the X-ray radiator; and wherein, when the designation device is operated to designate the detector to shift in a predetermined direction, the ~~first~~ shifter mechanism shifts the detector relative to the detector supporter and further shifts the detector supporter relative to the arm to help shift the detector in the predetermined direction.

Claim 24 (Original): The apparatus according to claim 15, wherein the image processor is further configured to correct a deformation of the fluoroscopic image data in accordance with the shift of the detector.

Claim 25 (Original): The apparatus according to claim 15, further comprising a display configured to display the fluoroscopic image data and the reference image data.

Claim 26 (Original): The apparatus according to claim 15, further comprising a designation device configured to designate that the detector returns to an initial position.

Claim 27 (Currently Amended): The apparatus according to claim 15, wherein the ~~first~~ shifter mechanism shifts the detector in at least one of a first direction and a second direction perpendicular to the first direction.

Claim 28 (Original): An X-ray diagnosis apparatus for obtaining an X-ray image, comprising:

an X-ray radiator configured to radiate an X-ray to a specimen;

a detector configured to detect an X-ray data resulting from the X-ray;

a set of gears coupled to the detector and configured to shift the detector along a detecting plane of the detector;

an X-ray radiator supporter coupled to the X-ray radiator and configured to move the X-ray radiator so as to cause the X-ray to be exposed throughout an effective detecting area of the detector;

a controller configured to control the X-ray radiator supporter in accordance with the shift of the detector;

an image processor coupled to the detector, the image processor having a memory configured to store one or more past fluoroscopic image data and being configured to prepare a current fluoroscopic image data based on the detected X-ray data and a contrast-enhanced reference image data based on at least one of the past fluoroscopic image data, and further to perform a subtraction processing between, the current fluoroscopic image data and at least a part of the contrast-enhanced reference image data, the part being determined in accordance with the shift of the detector; and

a display coupled to the image processor and configured to display a subtraction processed image.

Claim 29 (New): The apparatus according to claim 1, wherein the first shifter mechanism shifts the detector without concurrently shifting the X-ray radiator.

Claim 30 (New): The apparatus according to claim 13, wherein the first shifter mechanism shifts the detector in both the first direction and the second direction perpendicular to the first direction.

Claim 31 (New): The apparatus according to claim 15, wherein the shifter mechanism shifts the detector without concurrently shifting the X-ray radiator.

Claim 32 (New): The apparatus according to claim 27, wherein the shifter mechanism shifts the detector in both the first direction and the second direction perpendicular to the first direction.

Claim 33 (New): The apparatus according to claim 28, wherein the detector comprises a backside gear along a first direction of the detector.

Claim 34 (New): The apparatus according to claim 33, wherein the detector further comprises another backside gear along a second direction of the detector perpendicular to the first direction.